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**Institute of Wood Technology
and Wood Biology**

your References
14.02.2012

our References
KO/039/12

Date
2012-02-20

Wood identification - Summary report for location A

Dear ,

corresponding to the following references KO/092/11, KO/219/11, KO/317/11, KO/011/12, and KO/032/12 we received 59 wood samples originated from **location A** with the following identification marks for microscopic wood identification:

References/report **KO/092/11** – location **A** (lab delivery date 30th March 2011)

EC 198 715	EC 198 590	EC 198 546	EC 198 616	EC 198 538
EC 198 612	EC 198 563			

References/report **KO/219/11** – location **A** (lab delivery date 17th August 2011)

EC 198 574	EC 198 805	EC 198 816	EC 198 534	EC 198 899
EC 198 921	EC 198 994	EC 198 980		

References/report **KO/317/11** – location **A** (lab delivery date 05th December 2011)

EC 198 860	EC 198 979	EC 198 952	EC 198 992	
EH 897 623	EH 897 710	EH 897 753	EH 897 808	EH 897 502
EH 897 511	EH 897 527	EH 897 902	EH 897 644	EH 897 661
EH 897 652	EH 897 843	EH 897 749	EH 897 663	

References/report **KO/011/12** – location **A** (lab delivery date 09th January 2012)

EC 198 766	EC 198 819	EC 198 873	EC 198 930	EC 198 938
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References/report **KO/032/12** – location **A** (lab delivery date 30th and 31th January 2012)

EC 198 674	EC 198 653	EC 198 558	EC 198 714	EC 198 584
EC 198 556	EC 198 540	EC 198 718	EC 198 691	EC 198 713
EC 198 698	EC 198 722	EC 198 927	EC 198 655	
EH 897 733	EH 897 990	EH 897 583	EH 897 859	EH 897 649
EH 897 572	EH 897 926			

The individual samples were embedded into security tagged/numbered bags (comp. identification marks) and **personally received and opened by PD Dr. G. Koch** (comp. references/reports).

REPORT

For the wood identification small sectioning blocks were prepared from all individual wood samples (**59 specimens**, comp. listed numbers) and microscopically investigated (microscopic studies in transverse, tangential and radial orientation of the wooden tissues).

Wood identification/Results:

The wood anatomical characters (macroscopic as well as microscopic structural features) of **46 submitted samples** (see the following listed specimens) originated from **location A** fully correspond to timbers of the botanical genus

***Gonystylus* spp.** (family THYMELAEACEAE, Code according to EN 13556 **GYBN**).

Timbers pertaining to this genus are marketed under the trade name of "**Ramin, garu buaja** (ID)".

List of 46 specimens which are clearly identified as Ramin.

References/report KO/092/11 – location A (lab delivery date 30th March 2011)

EC 198 715	EC 198 590	EC 198 546	EC 198 616	EC 198 538
EC 198 612	EC 198 563			

References/report KO/219/11 – location A (lab delivery date 17th August 2011)

EC 198 574	EC 198 805	EC 198 816	EC 198 534	EC 198 899
EC 198 921	EC 198 994	EC 198 980		

References/report KO/317/11 – location A (lab delivery date 05th December 2011)

EC 198 860	EC 198 979	EC 198 952	EC 198 992	
EH 897 623	EH 897 710	EH 897 753	EH 897 808	EH 897 502
EH 897 511	EH 897 527	EH 897 902	EH 897 644	EH 897 661
EH 897 652	EH 897 843	EH 897 749	EH 897 663	

References/report KO/011/12 – location A (lab delivery date 09th January 2012)

EC 198 766	EC 198 819	EC 198 873	EC 198 930	EC 198 938
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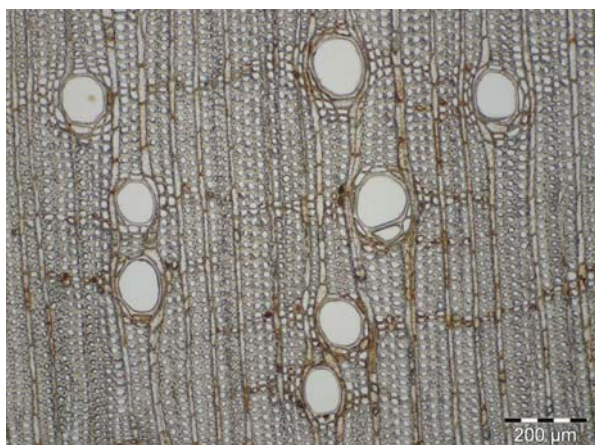
References/report KO/032/12 – location A (lab delivery date 30th and 31th January 2012)

EC 198 674	EC 198 584	EC 198 556	EC 198 722	EC 198 927
EC 198 698	EC 198 655	EC 198 713		

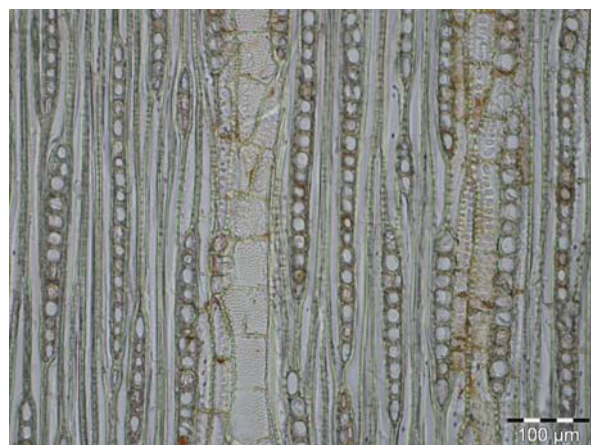
Note:

All individual species of the botanical genus *Gonystylus* are listed/protected in **CITES Appendix II**.

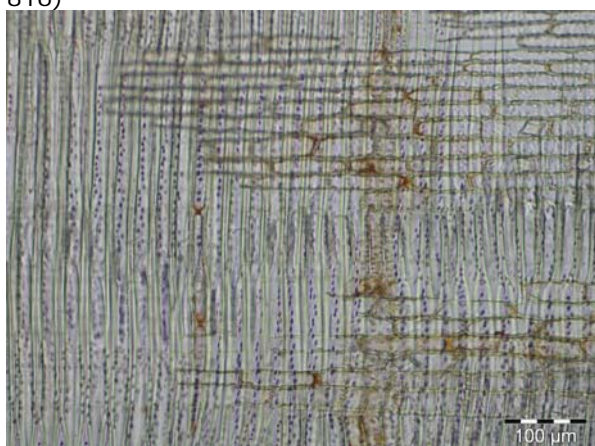
The following microscopic images provide representative anatomical structures of the sample no. **EC 198 816** (References/report KO/219/11 – location A / lab delivery date 17th August 2011) which are fully agree with the defined characters of **Ramin** species.



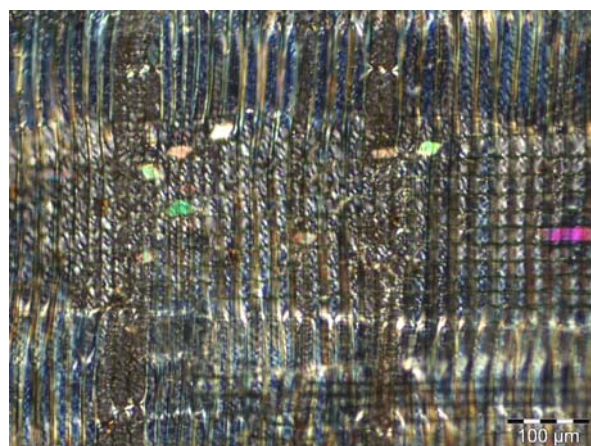
Transverse section of *Gonystylus* (showing typical confluent axial parenchyma, sample EC 198 816)



Tangential section of *Gonystylus* (showing typical uniseriate rays, sample EC 198 816)



Radial section of *Gonystylus* (showing distinctly bordered pits, sample EC 198 816)



Radial section of *Gonystylus* using polarised light (showing prismatic crystals, sample EC 198 816)

Following, a detailed wood anatomical description of *Gonystylus* is provided (database “commercial timbers” in the delta-intkey system). The described characters fully correspond to the detected anatomical features of the **46** listed specimens.

***Gonystylus* spp. (Ramin)**

Nomenclature: THYMELAEACEAE (GONYSTYLACEAE). *G. bancanus* (Miq.) Kurz (Syn.: *G. mi-quelianus* Teijsm. & Binn., *Aquillaria bancana* Miq.); *G. macrophyllus* (Miq.) Airy-Shaw; *G. warburgianus* Gilg, *Gonystylus* spp. Trade and local names: ramin (DE, GB, MY, ID); ahmin, kaya garu, melawis, ramin telur (MY); lanutanbagio (PH); garu buaja (ID). Listed in CITES Annex II.

Geographic distribution: Indomalesia.

General: Heartwood basically yellow to white or grey. Sapwood colour similar to heartwood colour. Density 0.55–0.57 g/cm³.

Vessels: Wood diffuse-porous. Vessels in multiples, commonly short (2–3 vessels) radial rows. Average tangential vessel diameter 85–150–200 µm. Average number of vessels/mm² 9–10–14. Perforation plates simple. Intervessel pits alternate, average diameter (vertical) 3–5 µm. Vessel-ray pits with distinct borders, similar to intervessel pits. Helical thickenings absent. Tyloses in vessels absent. Other deposits in heartwood vessels present (few, the colour of amber).

Tracheids and fibres: Fibres of medium wall thickness. Average fibre length 1050–1350–1750 µm. Fibre pits mainly restricted to radial walls, simple to minutely bordered or distinctly bordered. Fibres non-septate.

Axial parenchyma: Axial parenchyma not banded. Axial parenchyma paratracheal. Paratracheal axial parenchyma aliform, or confluent, or unilateral. Aliform parenchyma winged. Axial parenchyma as strands. Average number of cells per axial parenchyma strand 2–4–6.

Rays: Rays 9–14 per tangential mm, exclusively uniseriate. Aggregate rays absent. Rays composed of a single cell type (homocellular); homocellular ray cells procumbent.

Mineral inclusions: Crystals present or not observed, prismatic, located in ray cells. Crystal-containing ray cells procumbent. Number of crystals per cell or chamber one, or more than one. Crystals in one cell or chamber of the same size, or of two distinct sizes. Silica not observed.

Samples with the security tagged number (lab delivery date 30th and 31th January 2012):

EC 198 558	EC 198 653	EH 897 649
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The wood anatomical characters (macroscopic as well as microscopic structural features) of the three listed samples fully correspond to timbers of the botanical genus

***Palaquium* spp.** (family SAPOTACEAE).

Timbers pertaining to this species are marketed under the trade name of **Nyatoh**.

Samples with the security tagged number (lab delivery date 30th and 31th January 2012):

EC 198 540	EH 897 859	EH 897 926
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The wood anatomical characters (macroscopic as well as microscopic structural features) of the three listed samples fully correspond to timbers of the botanical species

Tetramerista glabra (family TETRAMERISTACEAE).

Timbers pertaining to this species are marketed under the trade name of **Punah**.

Sample with the security tagged number (lab delivery date 30th and 31th January 2012):

EC 198 718

The wood anatomical characters (macroscopic as well as microscopic structural features) of the listed sample fully correspond to timbers of the botanical genus

Alstonia* spp. - section *Alstonia (family APOCYNACEAE).

Timbers pertaining to this species are marketed under the trade name of **Pulai**.

Sample with the security tagged number (lab delivery date 30th and 31th January 2012):

EC 198 691

The wood anatomical characters (macroscopic as well as microscopic structural features) of the listed sample fully correspond to timbers of the botanical genus

***Durio* spp.** (family BOMBACACEAE).

Timbers pertaining to this species are marketed under the trade name of **Durian, red burong**.

Samples with the security tagged number (lab delivery date 30th and 31th January 2012):

EC 198 714	EH 897 572	EH 897 990	EH 897 583
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The wood anatomical characters (macroscopic as well as microscopic structural features) of the four listed sample fully correspond to timbers of the botanical genus

***Shorea* spp.** (family DIPTEROCARPACEAE).

Timbers pertaining to this species are marketed under the trade name of **Red Meranti**.

Sample with the security tagged number (lab delivery date 30th and 31th January 2012):

EH 897 733

The wood anatomical characters (macroscopic as well as microscopic structural features) of the listed sample fully correspond to timbers of the botanical species

Koompassia malaccensis (family FABACEAE-CAESALPINIOIDEAE).

Timbers pertaining to this species are marketed under the trade name of **Kempas**.

Note:

Nyatoh, Punah, Pulai, Durian, Red Meranti, and Kempas are not protected related to CITES-regulations.

The above results refer exclusively to the specimens sent and investigated. According to the prevalent regulations we are required to charge a fee for this kind of service. Please be so kind to effect your payment in line with the attached invoice to our account at the Bundeskasse.

Sincerely



pp

PD Dr. habil. G. Koch

Adj. Professor

Officially appointed advisor to the Federal Ministry for the Protection of the Environment, Nature Protection and Reactor Safety (BMU) on matters of subtropical and tropical timbers, including certification and CITES regulations.